Salmon and Steelhead: A New Perspective

IDAHO WILDLIFE FEDERATION

Agenda

- Idaho Wildlife Federation Intro
- The Governor's Salmon Workgroup
- What is killing our fish?
- The state of BPA and the emerging opportunity
- Piercing the fog of misinformation
- Columbia Snake River Operators DEIS


'03

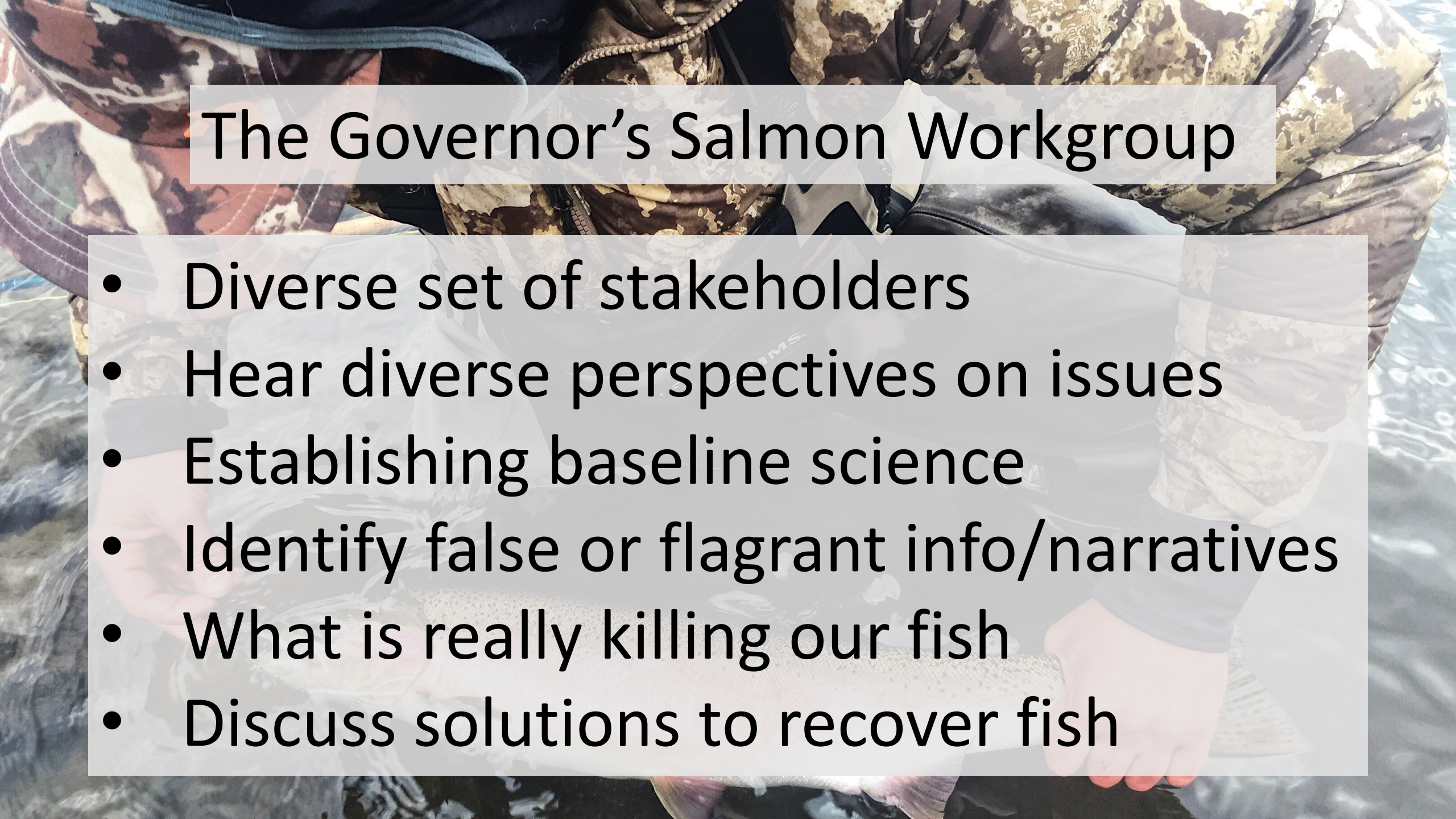
IWF's advocacy for salmon and steelhead

- Brought anglers/guides to meet with high level state gov. officials (4 years)
- Forming the Gov's Salmon Workgroup was a direct ask of IWF
- Organizing river communities
- Producing media for mass public education

Before we jump in…

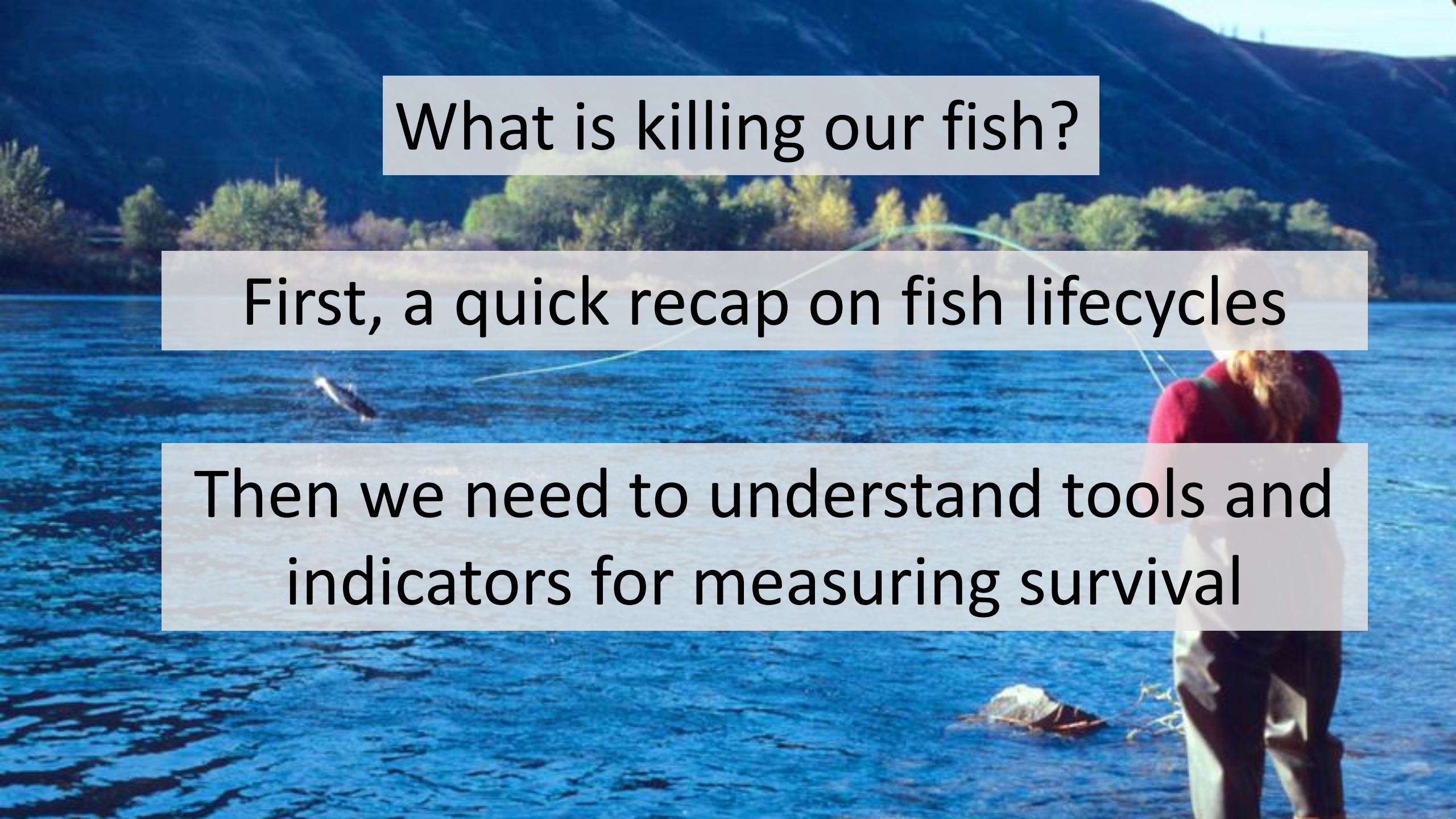
This is one of the most complex environmental, political, and economic issue in American history

We've learned this info over four years. There is more to unravel. We're trying to condense to 30 mins. You will have questions.



The Governor's Salmon Workgroup

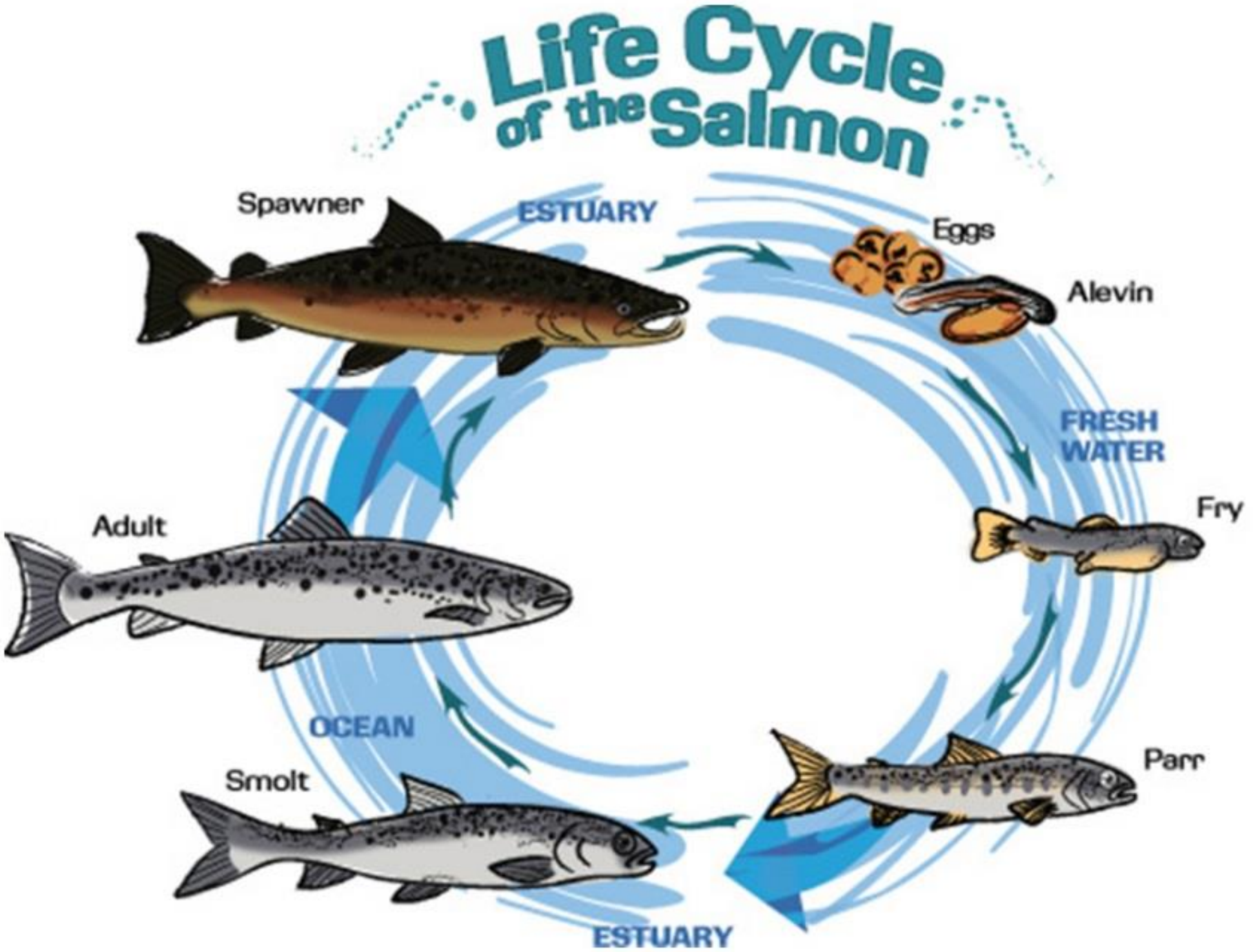
- Diverse set of stakeholders
- Hear diverse perspectives on issues
- Establishing baseline science
- Identify false or flagrant info/narratives
- What is really killing our fish
- Discuss solutions to recover fish



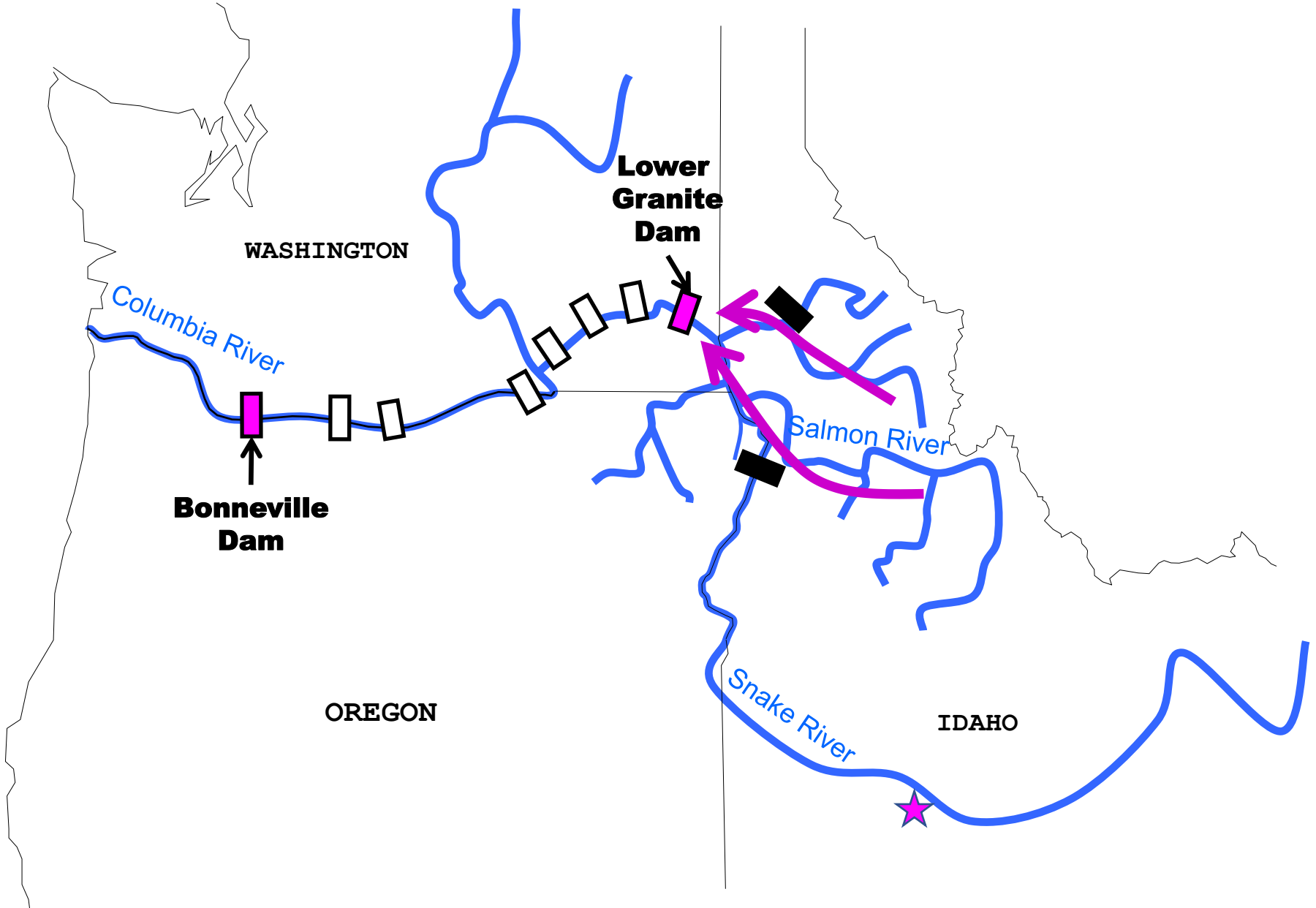
What is killing our fish?

First, a quick recap on fish lifecycles

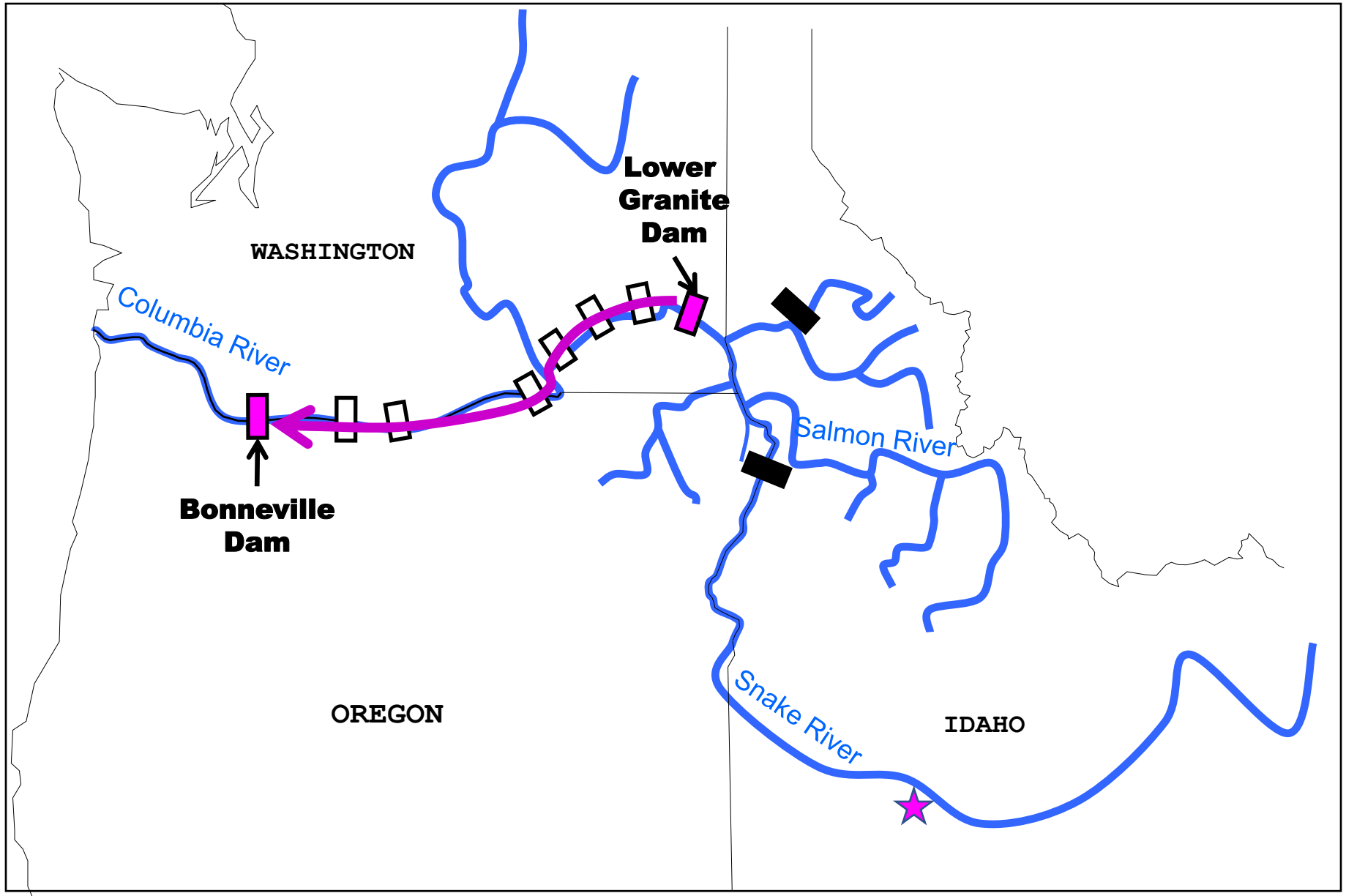
Then we need to understand tools and indicators for measuring survival


Life Cycle of the Salmon
Spawner
ESTUARY
Eggs
Alevin
FRESH WATER
Fry
Parr
ESTUARY
Smolt
OCEAN
Adult

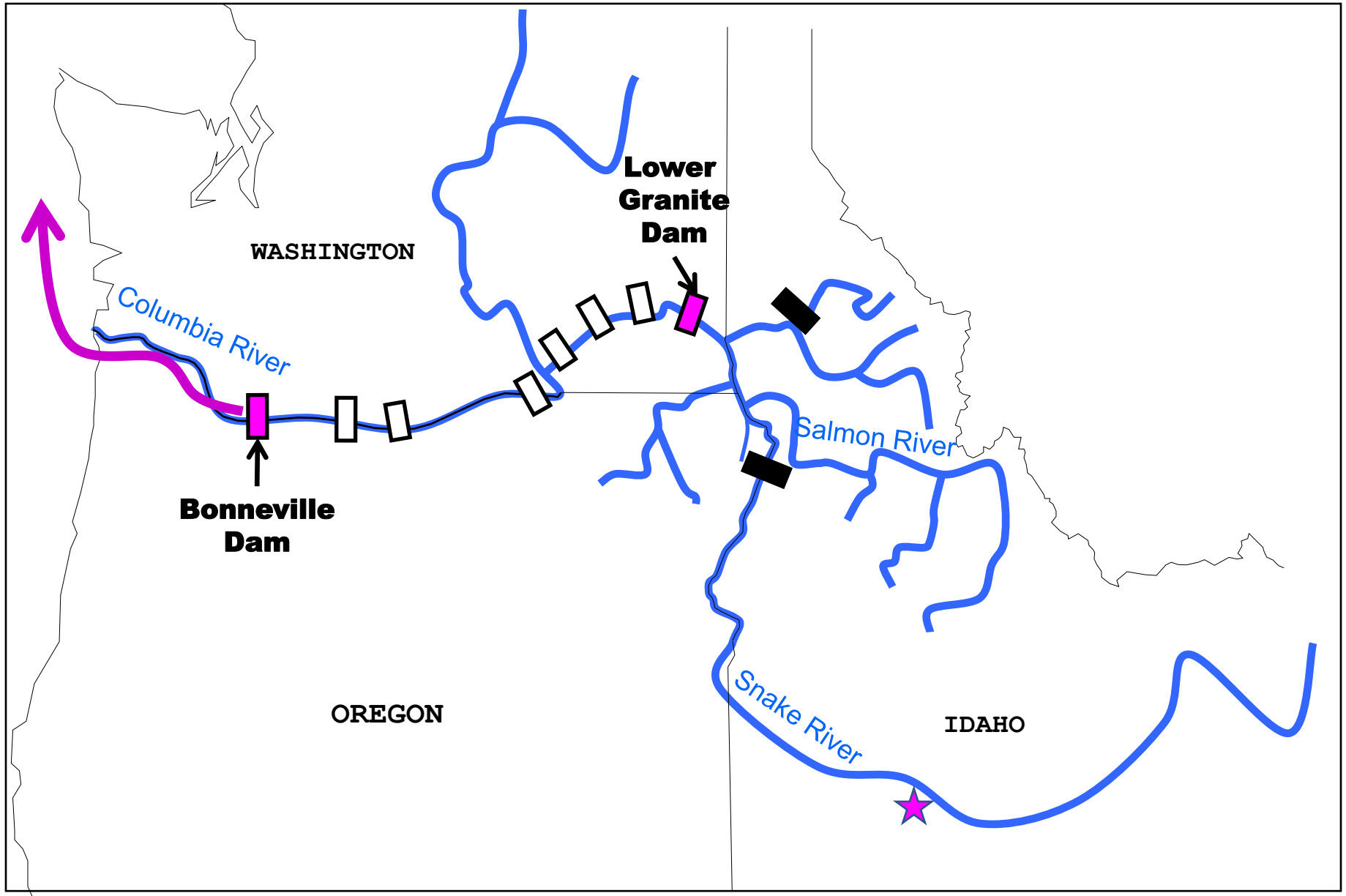
Smolt Emigration



Passage Through Hydrosystem

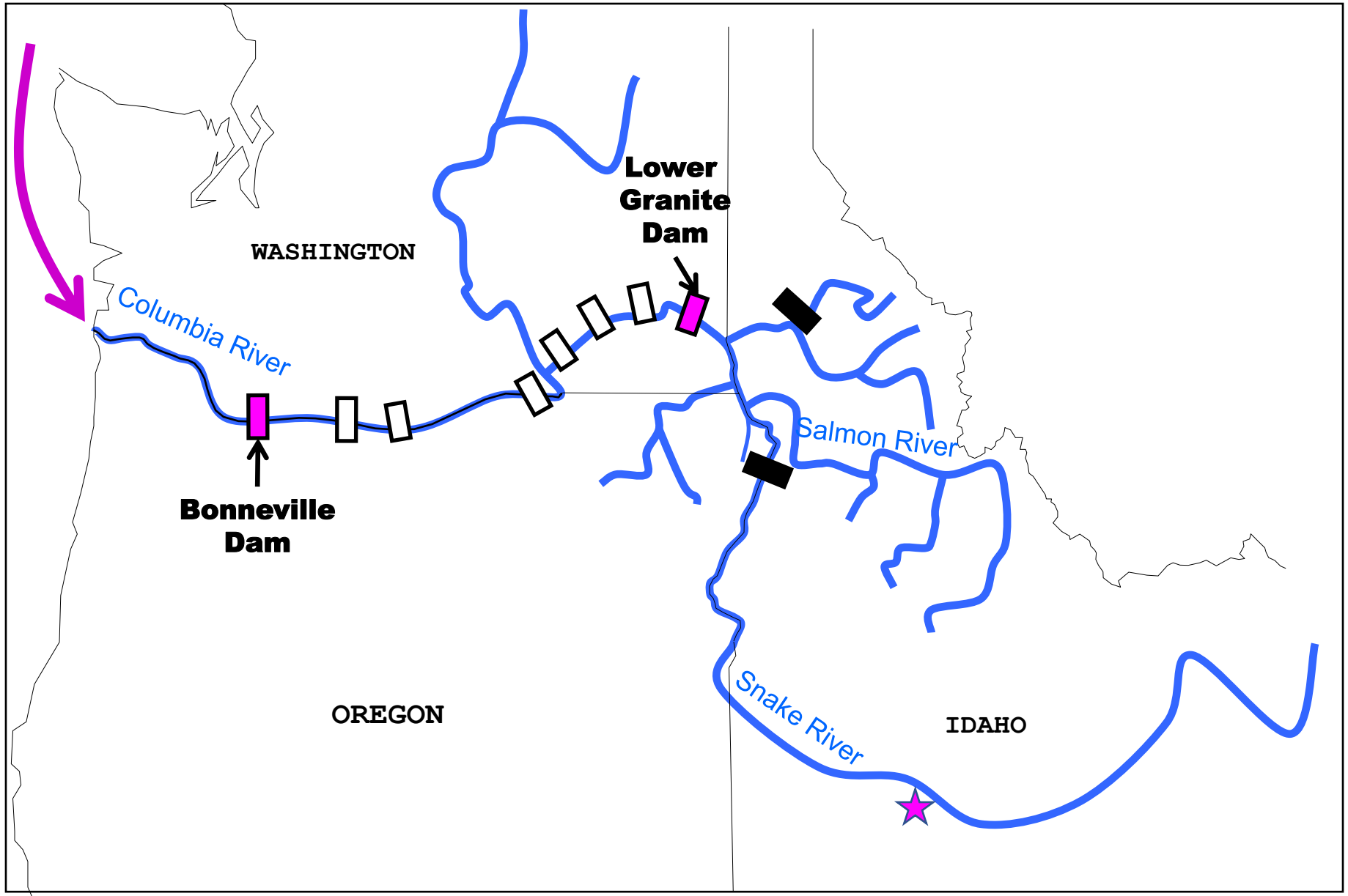


Estuary & Near Shore

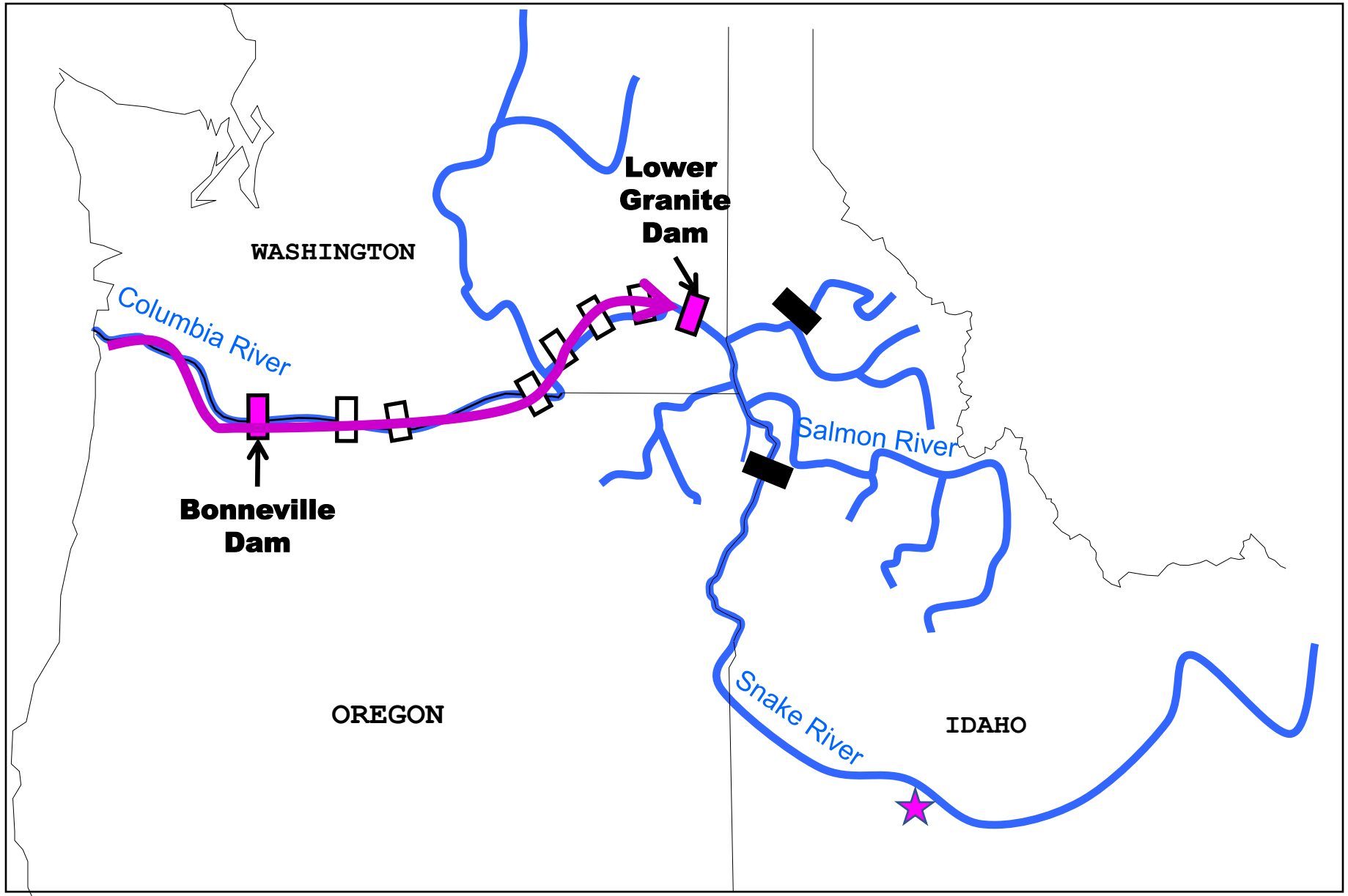


General migratory pattern of pacific salmon.

Return from the Ocean



Return to Idaho

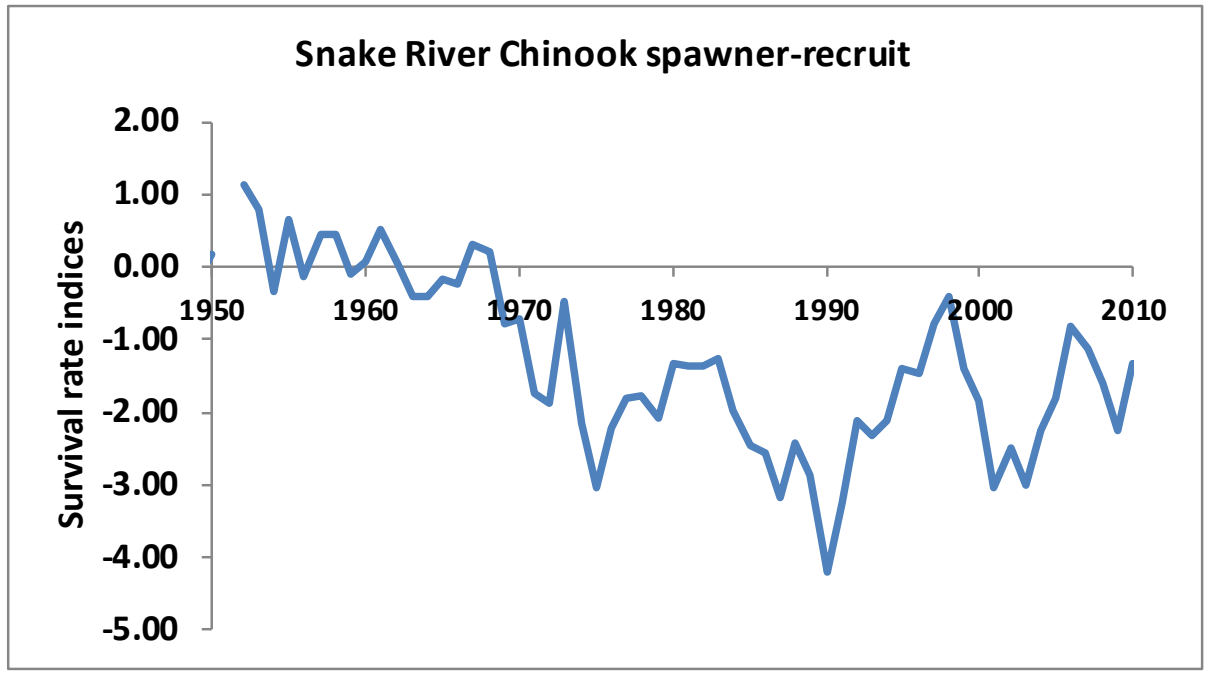


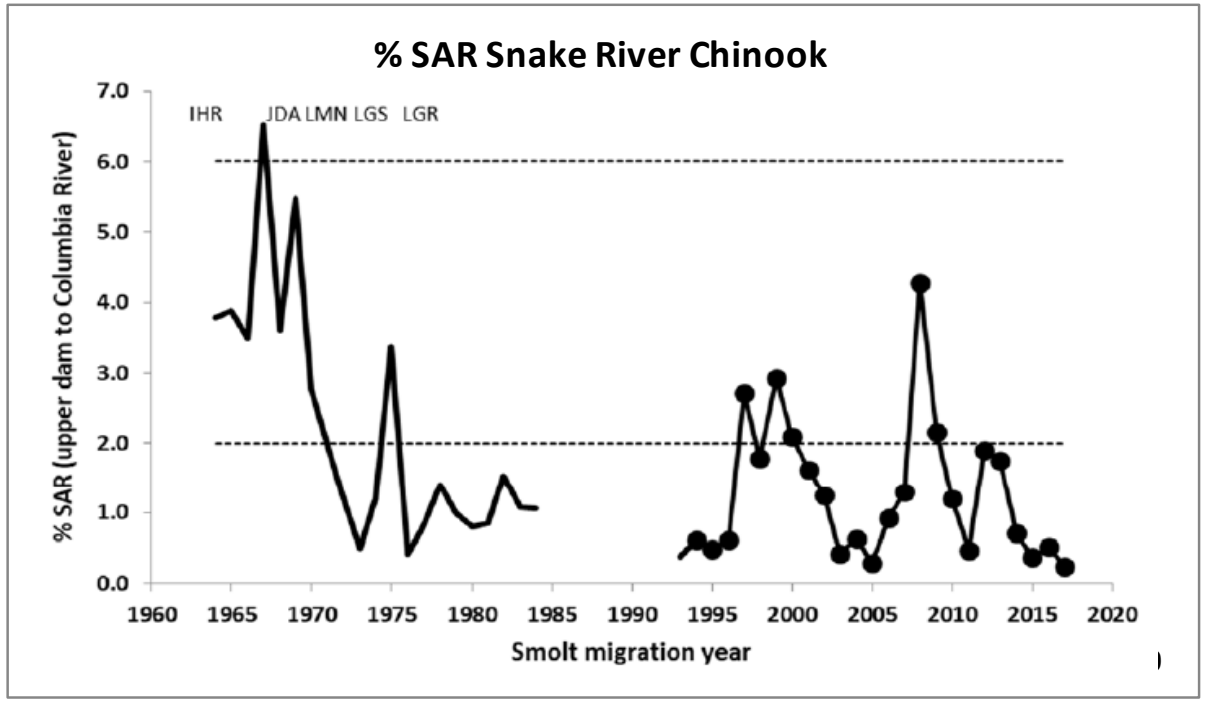
Measuring Returns: SARs (Smolt to Adult Return Ratio)

- Survival from beginning point as a smolt to ending point as an adult
- Must be between 2-6% to sustain #s
- <2% = population declines
- 4% = necessary for harvestable
- 6% = historic levels and true abundance

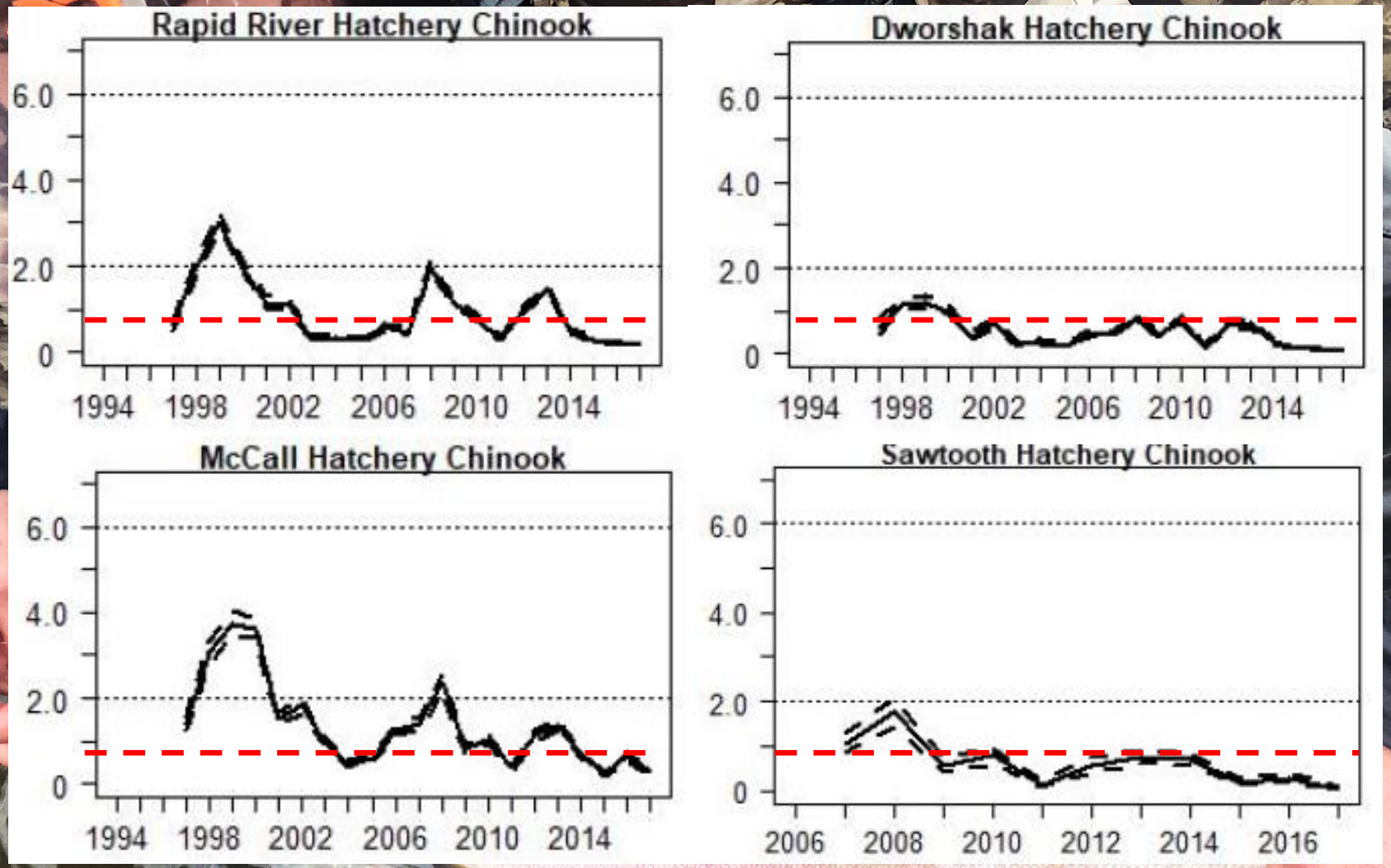
Measuring Returns: SARs

- SARs encompass several years
- Account for many hazards
- Determine adult numbers in Idaho
- Directly relate to population resilience

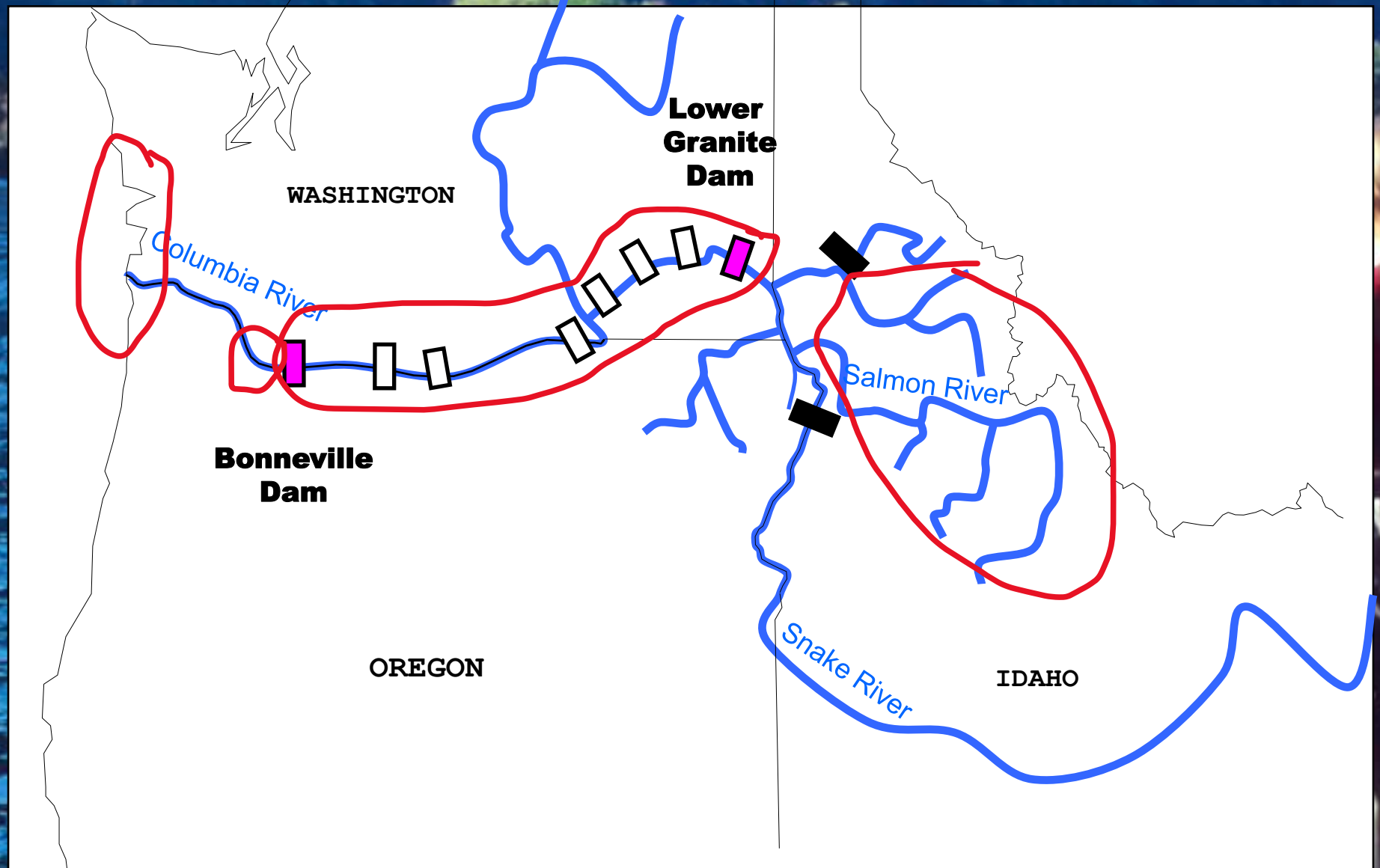

Snake River Chinook spawner-recruit
Survival rate indices
2.00
1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
1950
1960
1970
1980
1990
2000
2010


% SAR Snake River Chinook
% SAR (upper dam to Columbia River)
IHR
JDA LMN LGS
LGR
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Smolt migration year

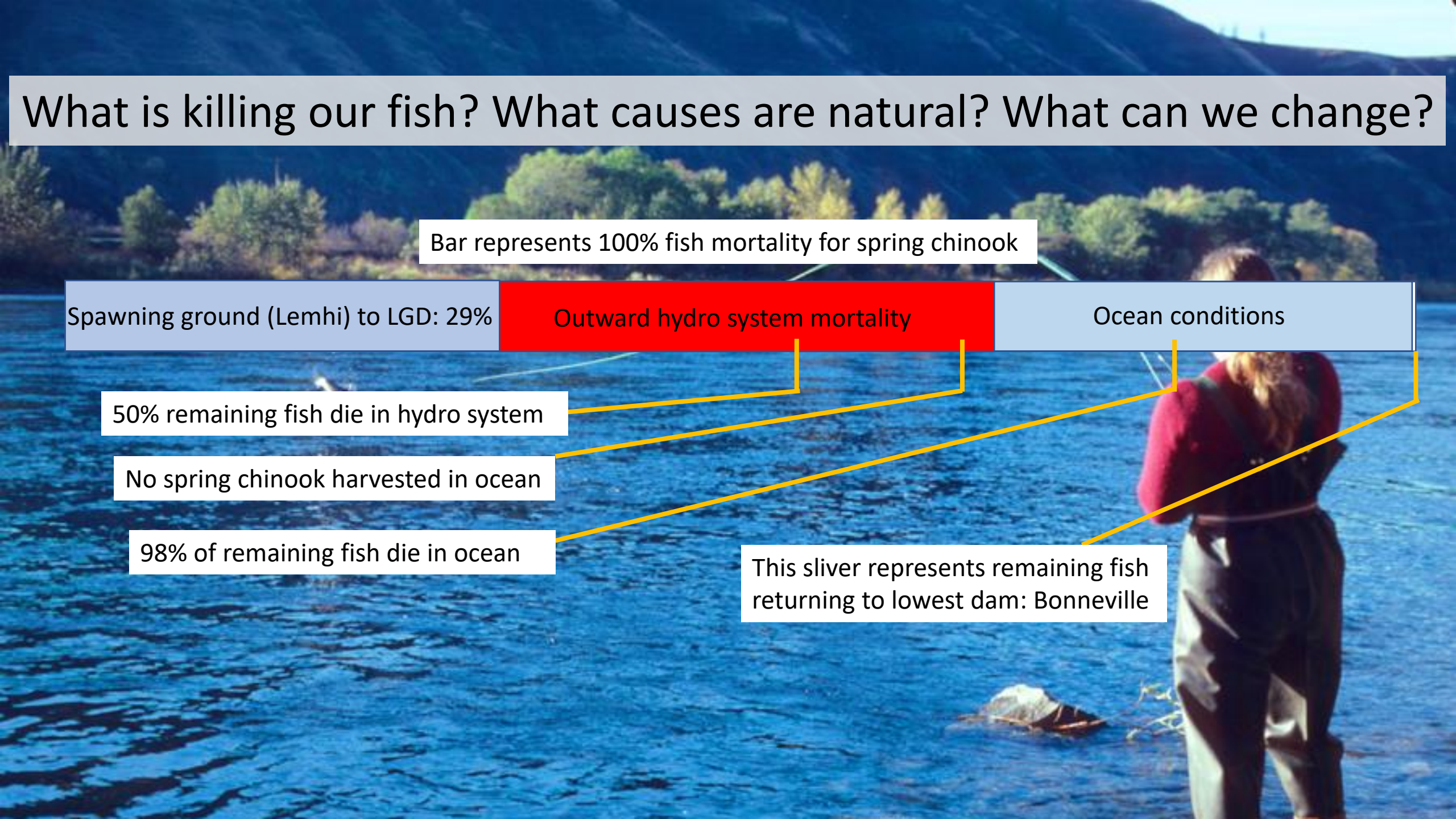
Hatchery fish need 0.87% SAR to meet mitigation goals



What is killing our fish?



What is killing our fish? What causes are natural? What can we change?



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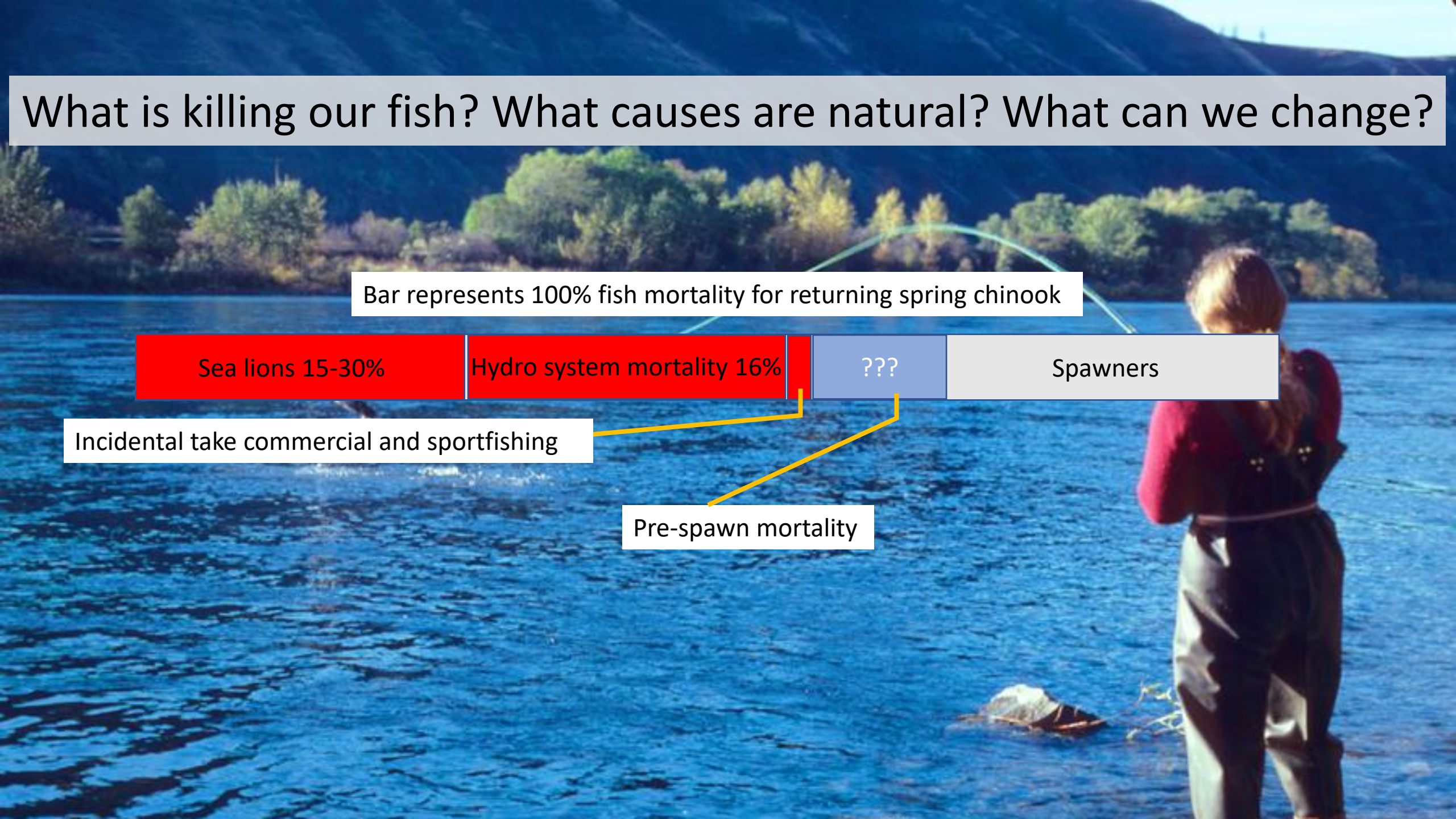
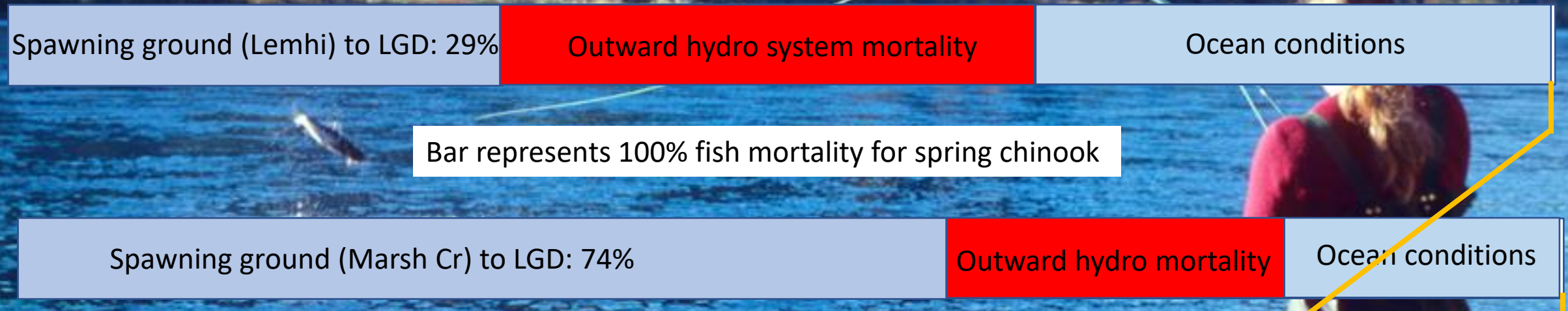


Perspective



Bar represents 100% fish mortality for spring chinook

When applied to hatchery fish this sliver indicates:

- All tribal harvest
- All sportfishing harvest
- All sea lion harvest

Flagrant claims of fish mortality

- Ocean harvest (Asia or “offshore”)
- Gillnetting on Columbia
- Sea lions*
- Tribal harvest

The biggest impacts

- Hydro system
  - Water transport time
  - Powerhouse interactions
  - Artificial predation
  - Warm water

- Ocean conditions
- Climate change
- Habitat

We can only do something about…

- Hydro system
  - Water transport time
  - Powerhouse interactions
  - Artificial predation
  - Warm water
- Ocean conditions
- Climate change
- Habitat

What does science say will get us to "Recovery SARs" or healthy and harvestable?

- We need holistic approach
- Water Transport Time and Powerhouse Interactions identified as largest mortality contributor.

What does science say will get us to "Recovery SARs" or healthy and harvestable?

- Breaching dams will solve:
  - Water Transport time
  - Powerhouse interaction
  - Artificial predation
  - Warm water issues

*Recognized by Mike Simpson

A new era for BPA and Snake River Hydro

Bonneville Power Administration

- Established in 1937
- Provide electricity to NW people at cost
- Sells and delivers power generated by 31 sources: dams, solar, nuclear, wind
- Including 4 Snake River dams

Bonneville Power Administration

"Whoops" in the 1970's

- BPA made wildly inaccurate power forecasts
- Built too much infrastructure (2x as needed)
- Resulting in $2.25 billion bond default known as "Whoops" (in reference to Washington Public Power Supply System)

Bonneville Power Administration

Northwest Power Planning Act of 1980

- Faced with crisis, congress swooped in
- Saved BPA and turned it into piggy bank
- Responsible for salmon mitigation
  - Must not harm salmon
- $17 billion spent for salmon and rising
- No accountability

Bonneville Power Administration

What once was…

- For a long time BPA was a power monopoly
- No money from congress. Supposed to be self-sustaining
- The bottom is falling out of the wholesale energy market (solar, wind, natural gas, efficient power grid)

Bonneville Power Administration

The new problem

- BPA charges $36/mwh
- But BPA produces 2x the power needed
- BPA sells the remaining 50% as surplus to keep costs low for primary customers
- Competitors sell power at $22/mgh

Bonneville Power Administration

The new problem (continued)

- BPA's customers are leaving
- $15 billion in debt
- Burned through $900 million in cash reserves
- Raised costs 30% to pay its debts
- Credit rating agency downgraded BPA to "negative" (Update: downgraded again in Feb.)

Bonneville Power Administration

The new problem (continued)

- BPA's debt to US Treasury is capped at $7.7b
- It's burned through $5b and will reach cap by 2023 (based on their own projections)

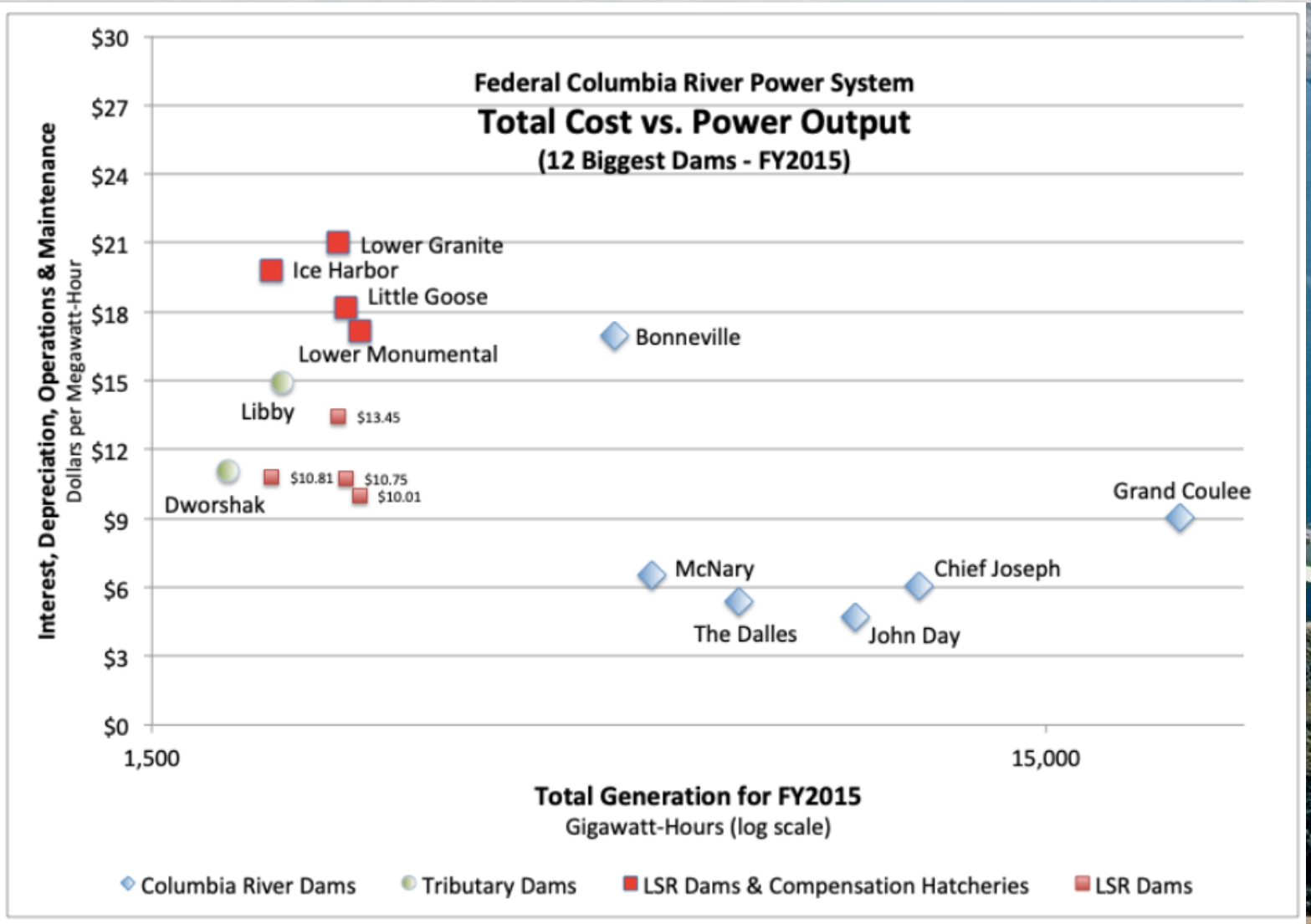
The opportunity presenting itself

- BPA is going broke
- We will need a new Northwest Power Act to save it
- Cannot be avoided

The opportunity presenting itself

- The opportunity is to ‘fix’ BPA in a way that benefits people and fish, make financially solvent
- BPA must be retrofitted with efficient assets
- NW has consolidated power in congress and can direct the change

Cost vs. Power Production of BPA's Assets



Source: www.bpa.gov/Finance/FinancialPublicProcesses/IPR/2016IPRDocuments/2016-IPR-CIR-Hydro-Draft-Asset-Strategy.pdf and www.bpa.gov/Finance/FinancialPublicProcesses/IPR/2014IPRMeetingMaterials/2014_IPR_FW_Workshop.pdf

The CRSO DEIS

- In 2016, 9th Circuit Court found CRSO was not meeting their obligation to recover salmon
- Mandated review of CRSO salmon recovery plan
- One Alternative required looking at dam breaching

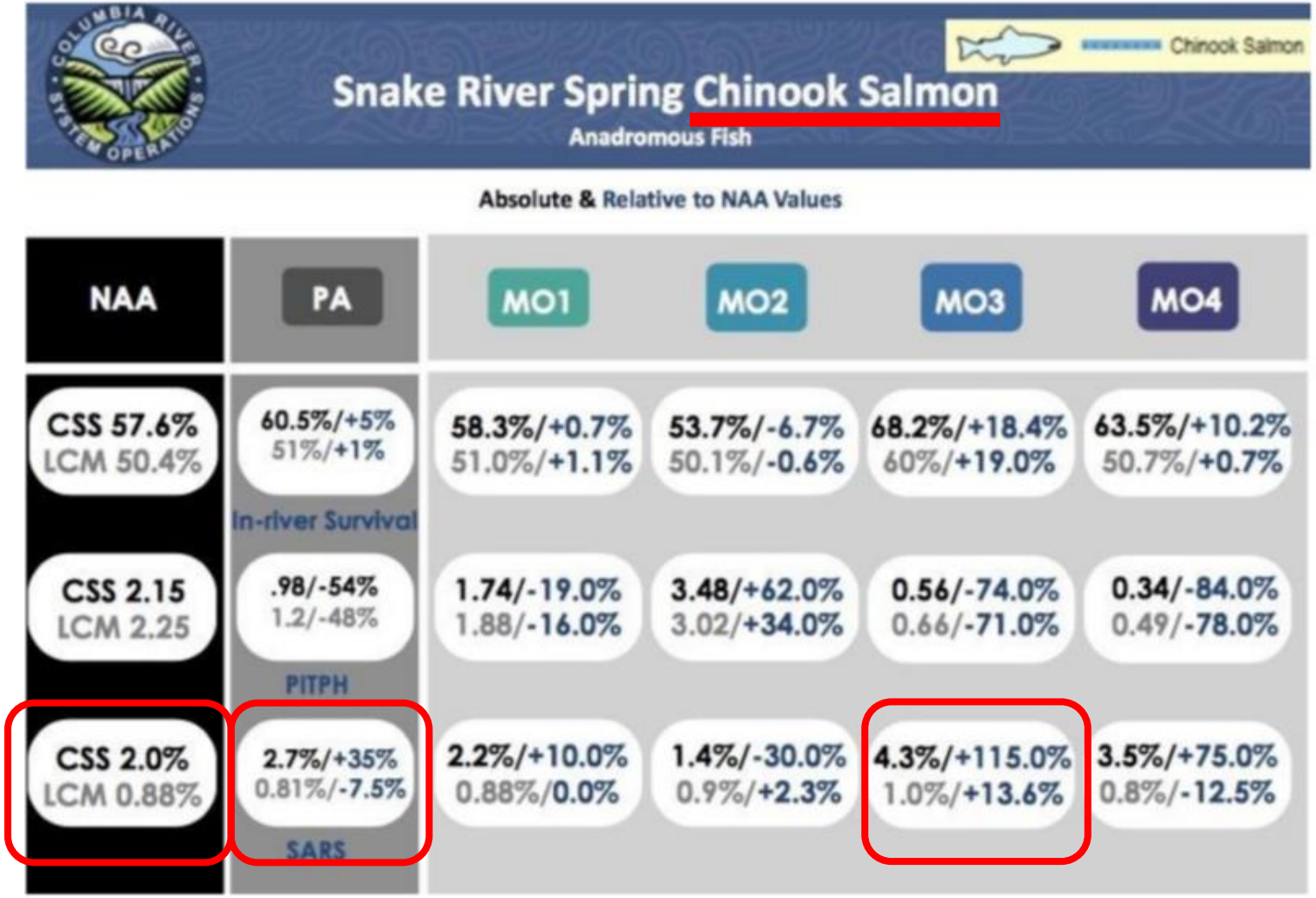
The CRSO DEIS

Table 1: Summary of Regional and Other Social Effects.

Resource	Social Welfare Evaluation	No Action	Preferred Alternative	MO3
Hydropower (power and transmission)	Replacement energy cost	13,000 aMW generation	$25 million annual cost	$270 million to $540 million annual cost
Recreation	Recreation consumer surplus	No change from recent historic conditions, 2.7 million visitors to lower Snake River	$2,000 annual cost (lost benefit)	**Short term** $8.9 million to $26 million annual cost, **Long term** river recreation to 50 percent lower to 30 percent higher visitation
Irrigation	Agriculture production (lost value)	No change from recent historic conditions, 48,000 irrigated acres from lower Snake River	No change	$12.3 million to $17.0 million annual cost
M&I Water Supply	Modification costs	No change from recent historic conditions,2.4 million tons of downbound grain on lower Snake River	No change	$4.9 million to $7.6 million annual cost
Navigation & Transportation	Change in shipping cost	No change from recent historic conditions	$93,000 decrease annual cost	$14 million to $48 million annual cost
Fisheries	Qualitative assessment	Consistent with historic conditions	Minor decreases or increases to social welfare benefits could occur	Social welfare benefits to fisheries may occur
Flood Risk Mgt.	Hazard analysis	Consistent with historic conditions	No change	No change

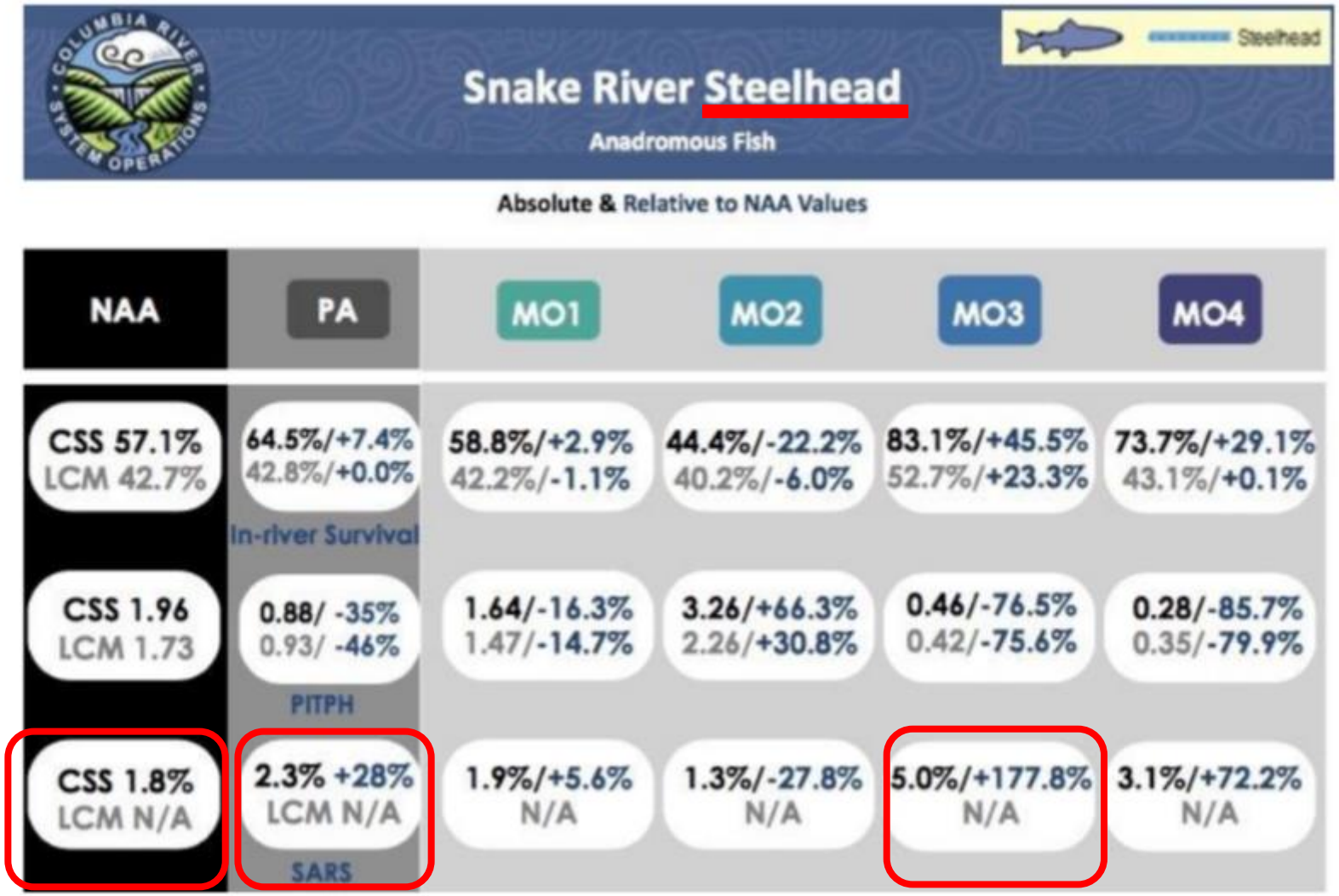
The CRSO DEIS

Table 2: Summary of predicted annual SARs for Snake River spring Chinook, evaluated by two models.



The CRSO DEIS

Table 3: Summary of predicted annual SARs for Snake River steelhead, evaluated by two models.



“The Tale of Two Crises”

Salmon extinction imminent

Solutions:
- Increase water transport time
- Stop powerhouse interactions
- Habitat improvement in natal streams and migration corridor
- Cull warm water, invasive predators
- Keep water cold

BPA financial crisis imminent

Solutions:
- Reduce costly, large assets
- Reduce spending on fish mitigation (by investing in real improvements for recovery)
- Diversify power generation with smaller, less costly assets

That was a lot of info! Questions?

IDAHO WILDLIFE FEDERATION